

Field Calibration Software (FCS-100)

User Guide
For SLITE series & TF series & DB tiles

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Changes

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1. CONCEPT AND INSTALLATION



About the Field Calibration

When swapping LED frame, it is possible that the color uniformity cannot be reached for the whole wall. To solve this problem, Barco developed a tool, Field Calibration software, namely FCS-100. When using this tool, calibrate the frame by modifying LMT data to obtain good uniformity of the LED screen.

1.1 Basic concept

Different steps to be taken

1. Swap the new frame. Follow the service manual for more detail about changing a frame on site.
2. Configure and adjust the wall with Director Toolset
3. Calibrate the wall with Director Toolset, use the desired calibration level
4. Display a white image and view it. If there is still different in uniformity, install FCS-100 software on controller PC.
5. Connect controller PC with digitizer (D-320, DMP-100, or DX-700) and use Field Calibration to correct the un-uniformed tiles/frames

Preparations

For D-320 or DMP-100 based digitizer **A serial line to connect controller PC with digitizer**

For DX-700 based digitizer **A network cable to connect controller PC with digitizer**

1.2 Installation procedure

How to install

1. Download the installation pack of FCS-100
2. Double click on setup.exe



Image 1-1

3. Press next to run the installation

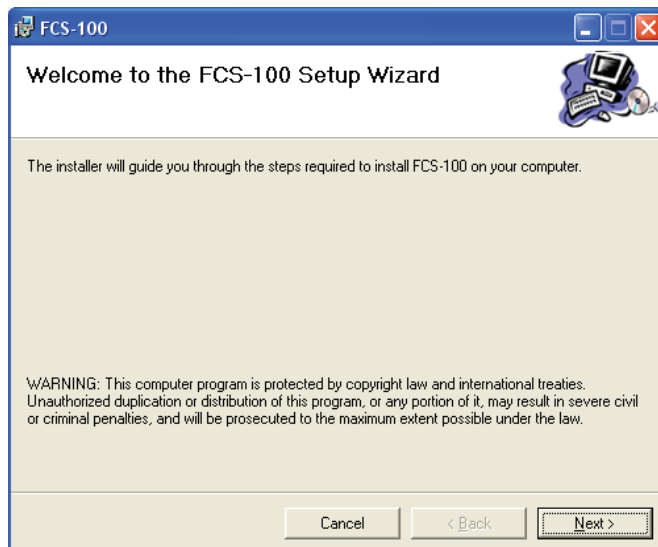


Image 1-2

4. Select the installation path or use the default one, and press next

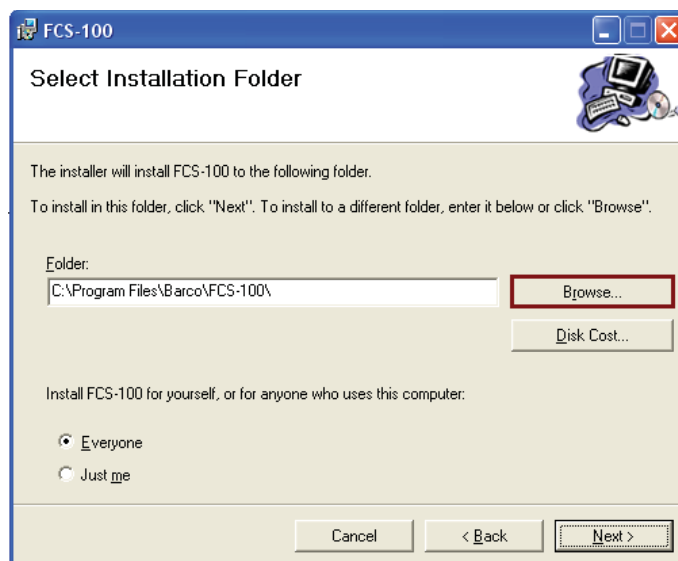


Image 1-3
Select installation folder

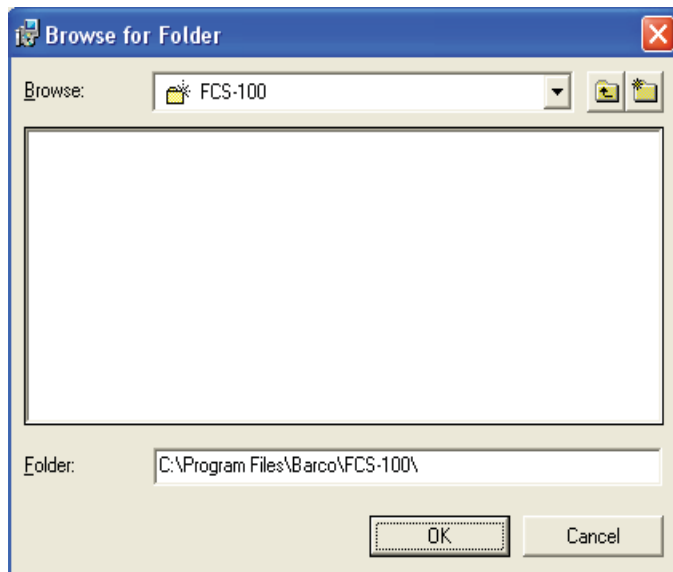


Image 1-4
Press next to start installation

5. Press next to start the installation

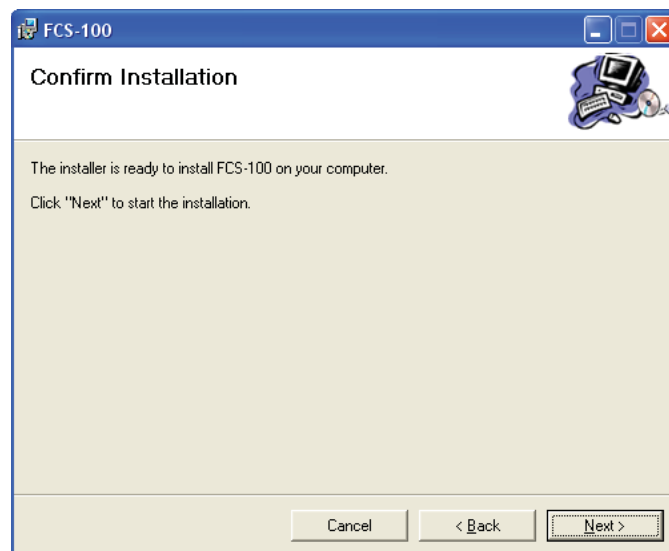


Image 1-5
Press next to start installation

Note: The install shield will install all necessary files when following its steps

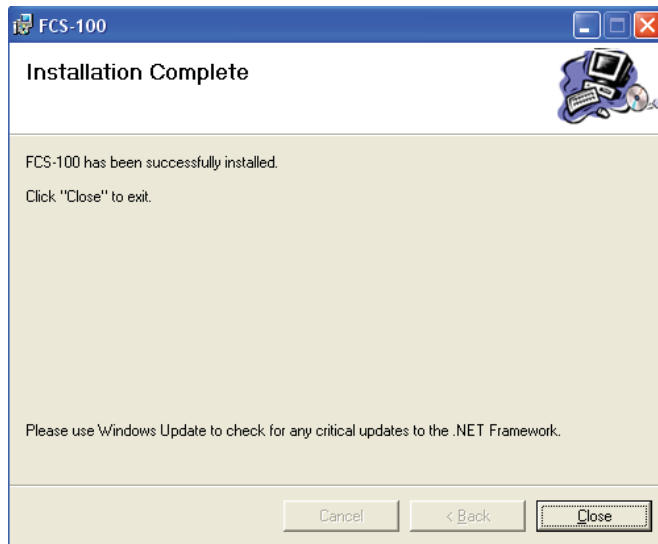


Image 1-6

Note: After installation, the icon will be set at desktop and start->program menu

2. FIELD CALIBRATION

2.1 Quick start

Physical Connect

1. For D-320/DMP-100 based digitizer, connect COM port of digitizer with controller PC

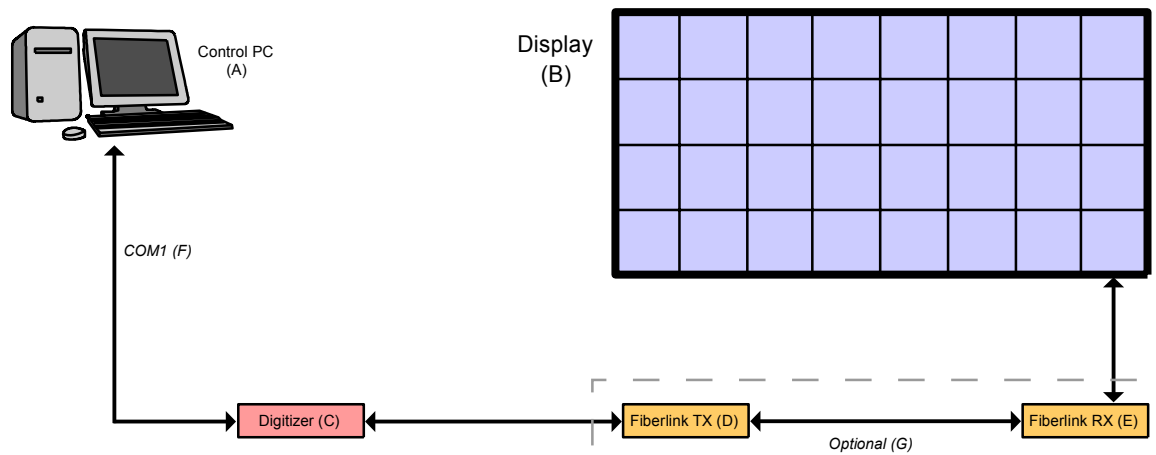


Image 2-1
setup 1

- A Computer
- B Display devices
- C D-320/DMP-100 based Digitizer
- D FiberLink transmitter
- E FiberLink receiver
- F COM1

Or,
For DX-700 based digitizer, connect it with controller PC via Ethernet.

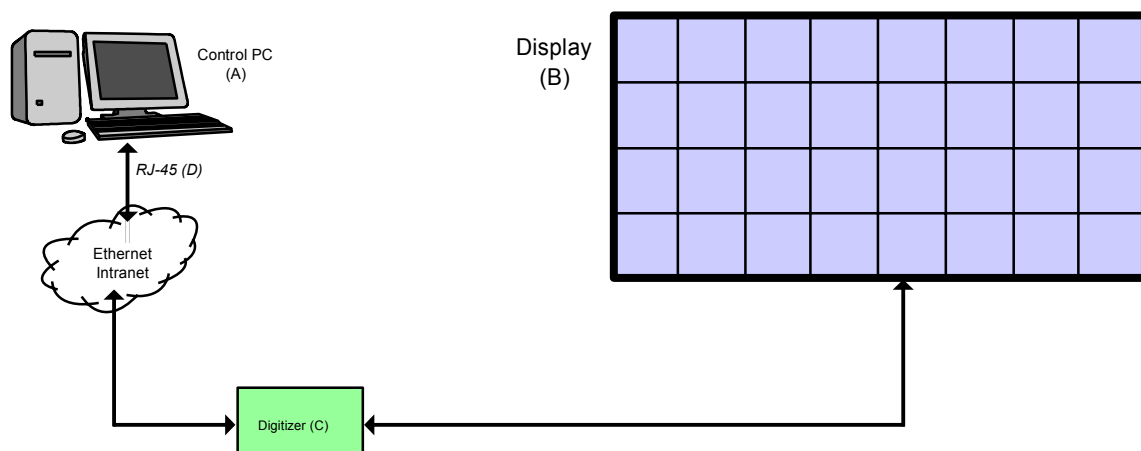


Image 2-2
setup 2

- A Computer
- B Display device
- C DX-700 based digitizer
- D Ethernet connection

2. Double click on the software icon to run FSC-100

3. Configuration

- (1) Click on Configuration page;
- (2) Select connect mode; For D-320/DMP-100 based digitizer, select "RS232" connect mode, and press to configure the COM port and bandrate.
- (3) For DX-700 based digitizer, select "ETHERNET" connect mode, and press to configure IP address, bank and output, which is accordant with DX-700 .
- (4) Select LED type from drop down list;
- (5) Press "off" button to establish connection, Red "off" will change to Green "On", And "Establish connection" is shown.

2. Field calibration

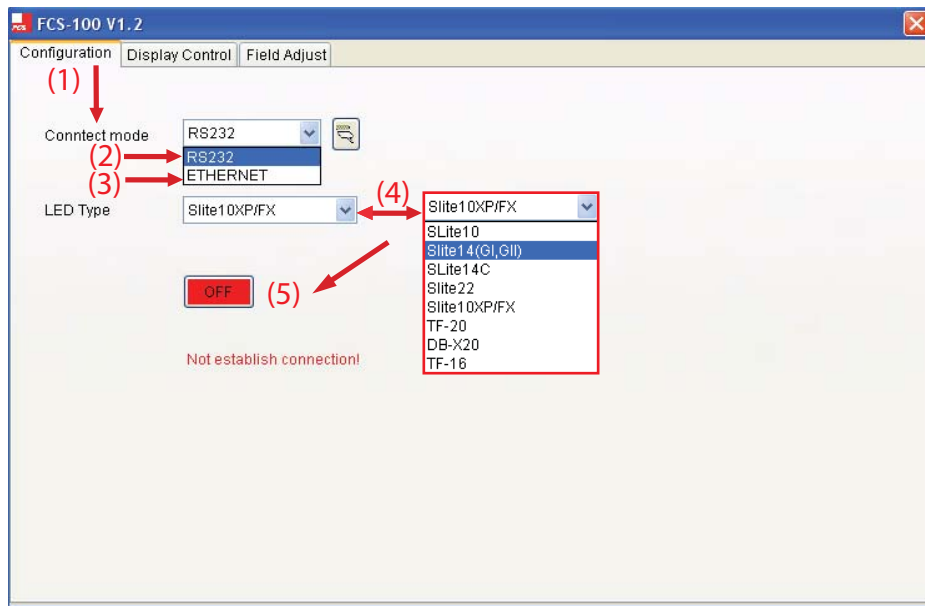


Image 2-3

4. Field adjust

- (1) Click on Field Adjust tab
- (2) Press "Backup/Restore LMT Data" to back up LMT data of the desired tiles/frames in the pop up dialog.
- (3) Input tile address in text, and click the frame number in "select frame", the selected one in red colored, is positioned on LED wall with outline too. Check if the desired frame is selected.
- (4) Press "Read" in "LMT Data" frame, x, y, and Y value is shown in the table.
- (5) Input new LMT value in the text below "Y (modify)"
- (6) Select the desired calibration level in "Calibration Simulation" frame
- (7) Next press "Simulate" and view the effect on LED wall;
- (8) If simulation effect is OK, press "Modify" to modify the raw LMT data with this new value. If NOT OK, repeat step (5) ~ (7) again

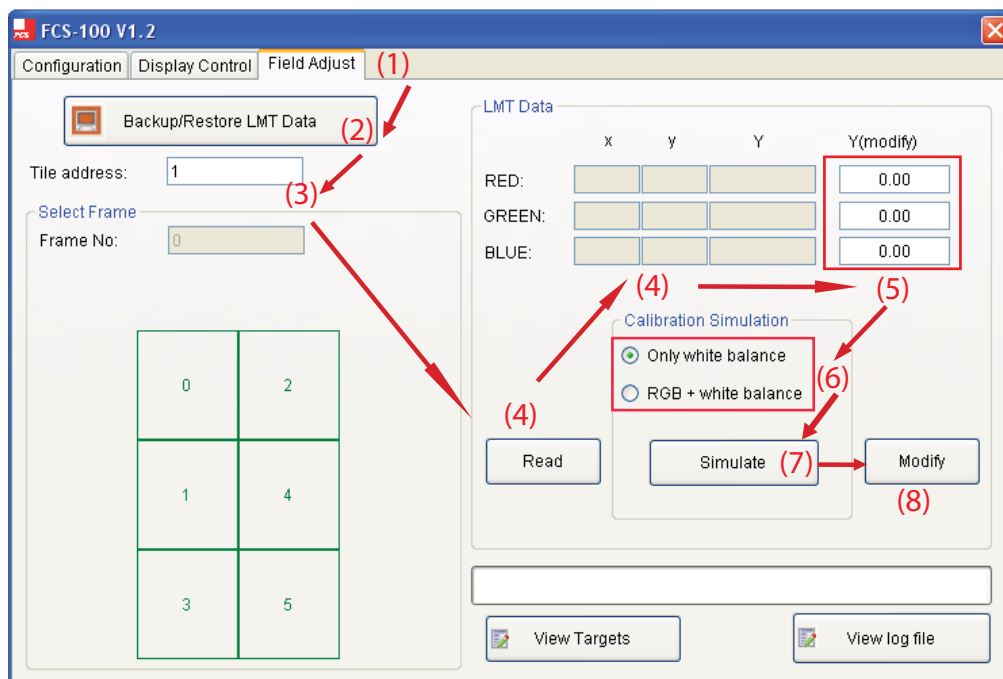


Image 2-4
configuration



WARNING: Must backup LMT data before modify it. When LMT data is badly modified, press "Backup/Restore LMT Data to restore the raw LMT data in the pop up dialog .



For SLite10, SLite14(GI, GII), SLite14C, and SLite22 LED wall, if it is tile based un-uniform, use “modify AC” (Refers to chapter 2.5) to correct the tile’s un-uniform.

2.2 Start up Field Calibration

How to start up Field Calibration

While there are differences in uniformity for a LED screen, double click the field calibration icon on the desktop or select start- > program -> Barco FCS-100 -> FCS-100 to start up.

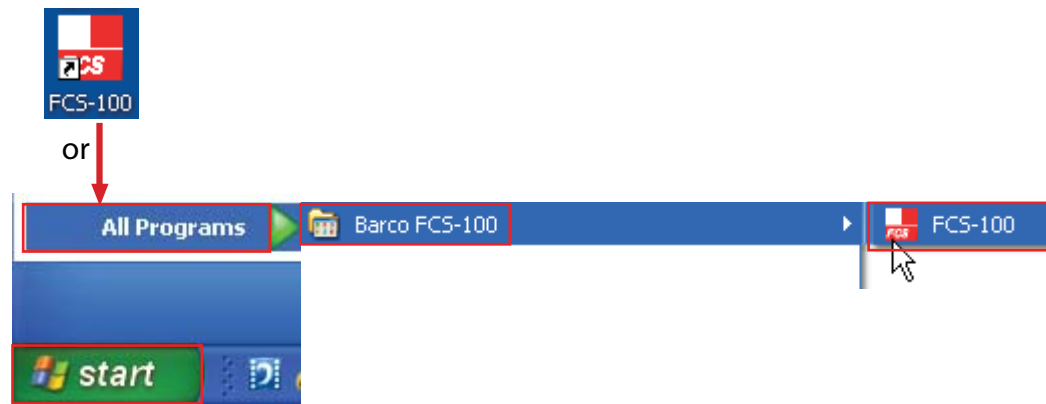


Image 2-5

2.3 Configuration



What is Configuration

In tab "configuration", configure the connect mode and LED type to establish connection with LED screen

How to configure D-320/DMP-100 based digitizer

1. Select "RS232" when connecting with DB-320 or DMP-100
2. Press "open" button to set the communication parameters
3. Select COM port and baudrate from the dropdown list, and press "OK"

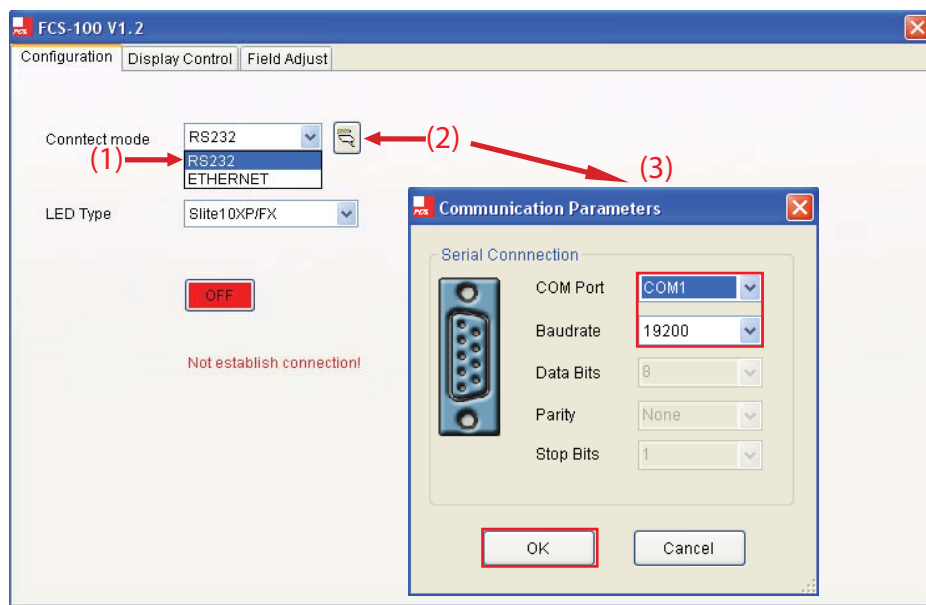


Image 2-6
configure D-320/DMP-100



The data bits, parity and stop bits are fixed with default value

How to configure DX-700 based digitizer

1. Select "ETHERNET" when connecting with DX-700
2. Press "open" button to configure the Ethernet parameter
3. IP address is the same with DX-700, select the bank and output parameter, and press "OK"

2. Field calibration

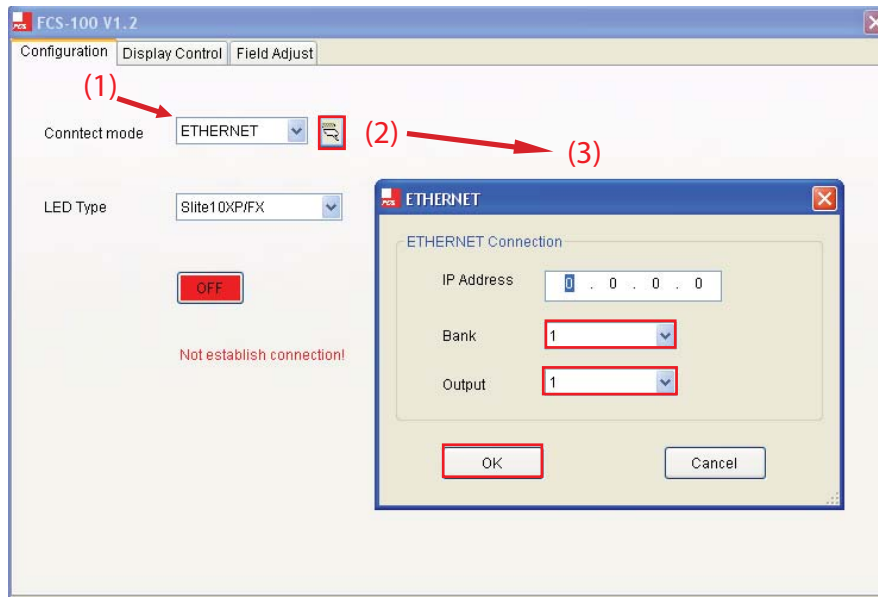


Image 2-7
configure DX-700

How to select LED type

Select LED type from the drop down list

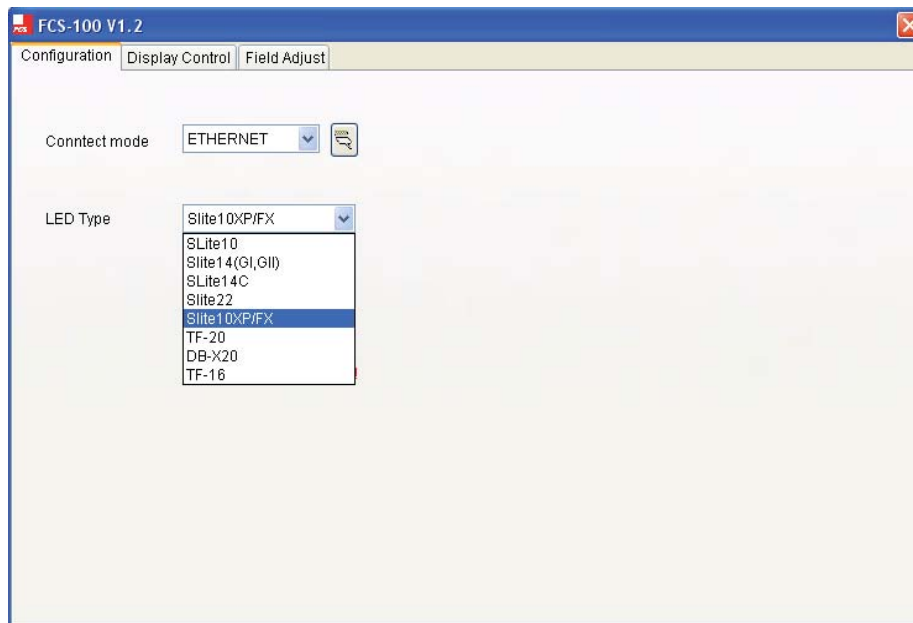


Image 2-8
select led type



FCS-100 software supports following LED types: SLite10, SLite14 (GI, GII), SLite14C, SLite22, SLite10XP/FX, TF20, DB-X20 and TF-16. Make sure the right LED type is selected before establishing connection.

How to establish connection



If the connection is unsuccessful, "Not establish connection!" alarm is shown. If the connection is successful, Red "off" will change to Green "On", and "Establish connection" is shown. LED screen can NOT be operated unless the connection is established

2.4 Display control

Digital contrast

To change the brightness, click on the slider and move it left or right until the desired value is reached. At right of the slider shows the current brightness (percent of the maximal brightness)

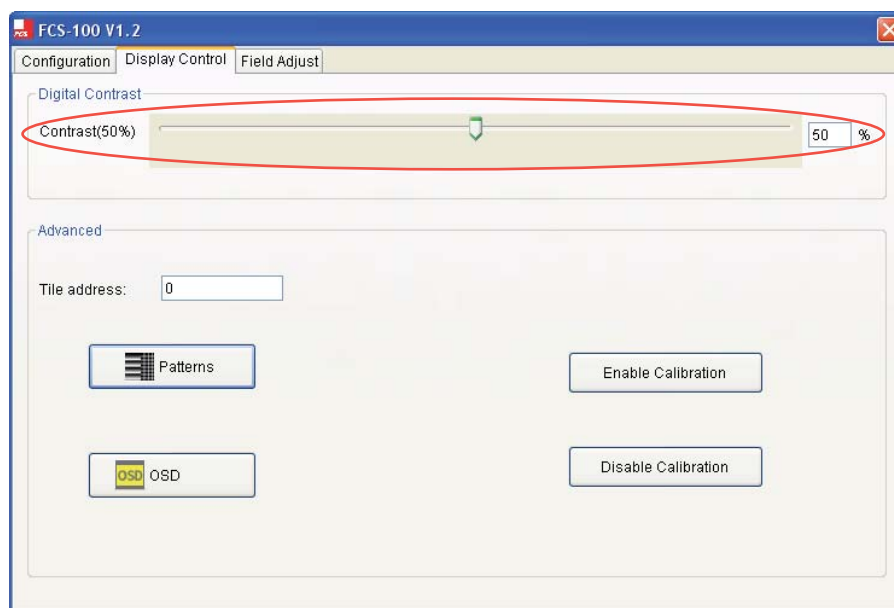


Image 2-9
Digital contrast



Digital contrast is in broadcast mode to change the brightness of all tiles.

Advanced

Advanced has Patterns switch, OSD display, Enable Calibration and Disable Calibration functions as below illustrated.

2. Field calibration

- Patterns**

Press "Patterns" button. In the popup dialog, check the check box "show internal pattern" or uncheck it to get the internal or external pattern. If it's internal pattern, single color can be selected by checking the check box "Red", "Green", or "Blue" in "Pattern Color". Or, Loop RGBW to get the White, Red, Green and Blue color loop automatically

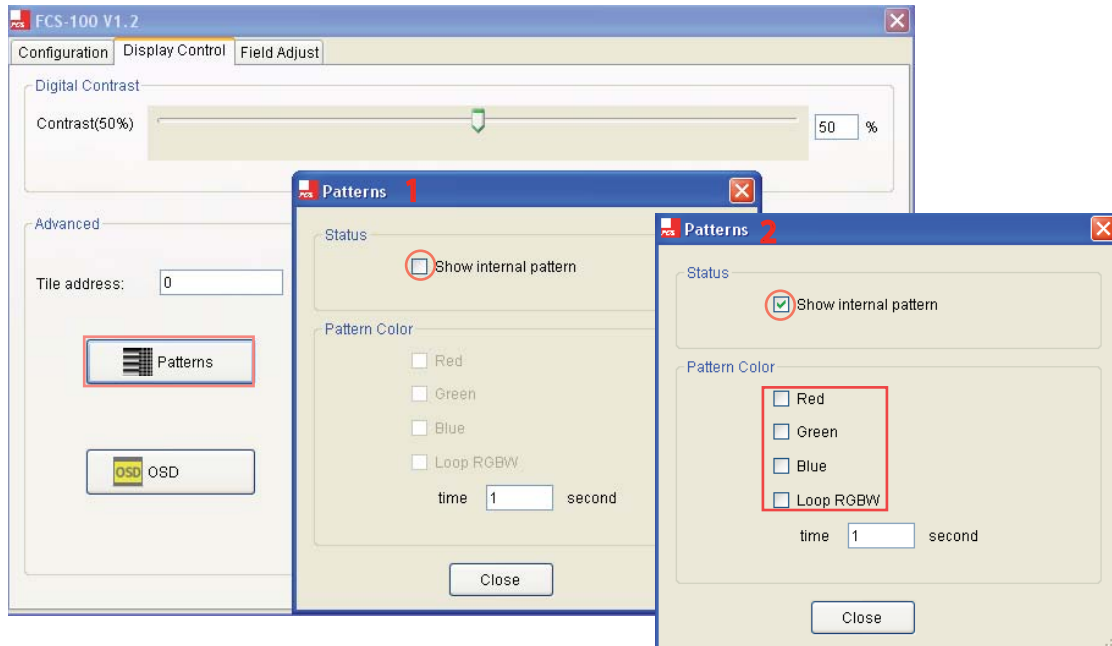


Image 2-10

- OSD**

Press "OSD" button. In the popup dialog, click at the right of the list, select the desired info. Check the "Enable OSD" check box to show the info on LED wall. The info only shows several seconds, unless the "Repeat Send" check box is checked

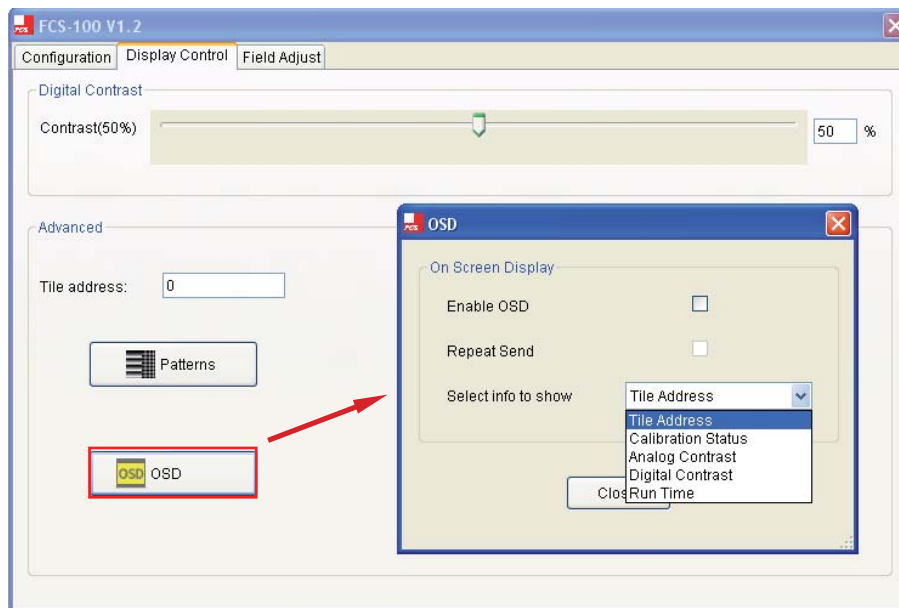


Image 2-11
OSD

- **Enable Calibration**
Press "Enable Calibration" to load the calibration as illustrated.

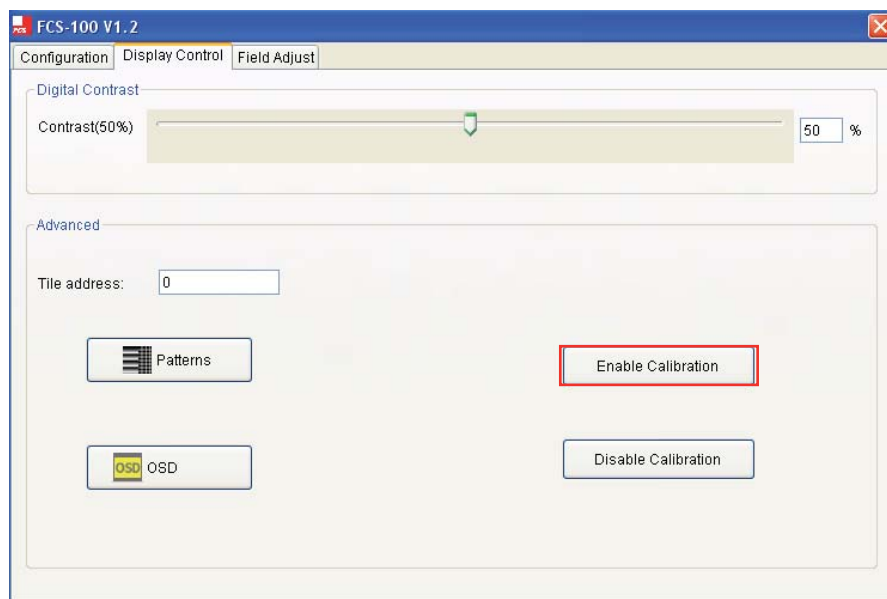


Image 2-12
Enable calibration

- **Disable Calibration**
Press "Disable Calibration" to cancel the calibration as illustrated.

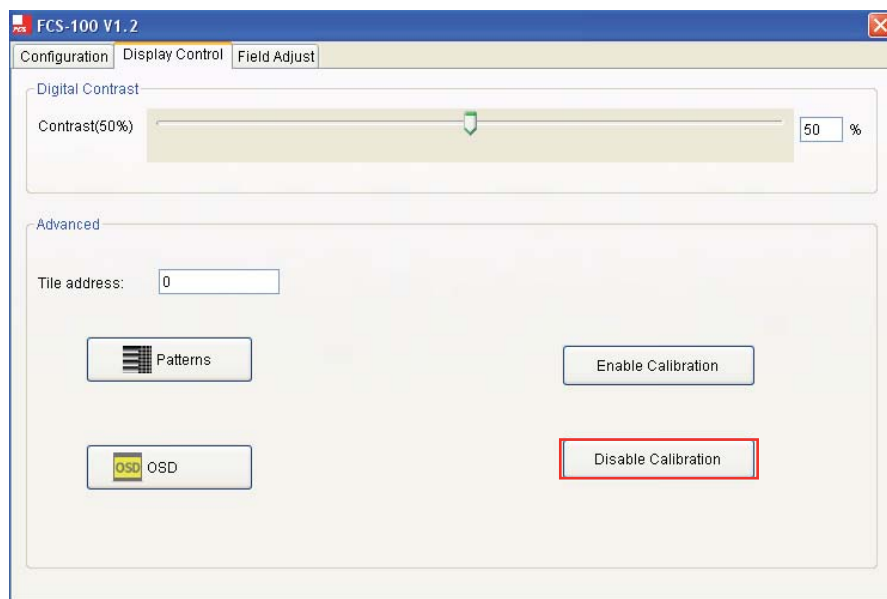


Image 2-13
Disable Calibration



To show the OSD info, "Enable OSD" must be checked.

2.5 Modify AC



What is modify AC

For SLite10, SLite14(GI, GII), SLite14C, and SLite22 LED wall, AC value can be modified to adjust the uniformity by tile.

How to modify AC

1. input the desired tile address in text.
2. press "Read AC" to obtain the current AC value. It will be shown in texts "Red", "Green", and "Blue".
3. Input new AC value in text if necessary, and press "Write AC" to make it works.
Or,
Press "Write default AC" to recover the tile with default AC

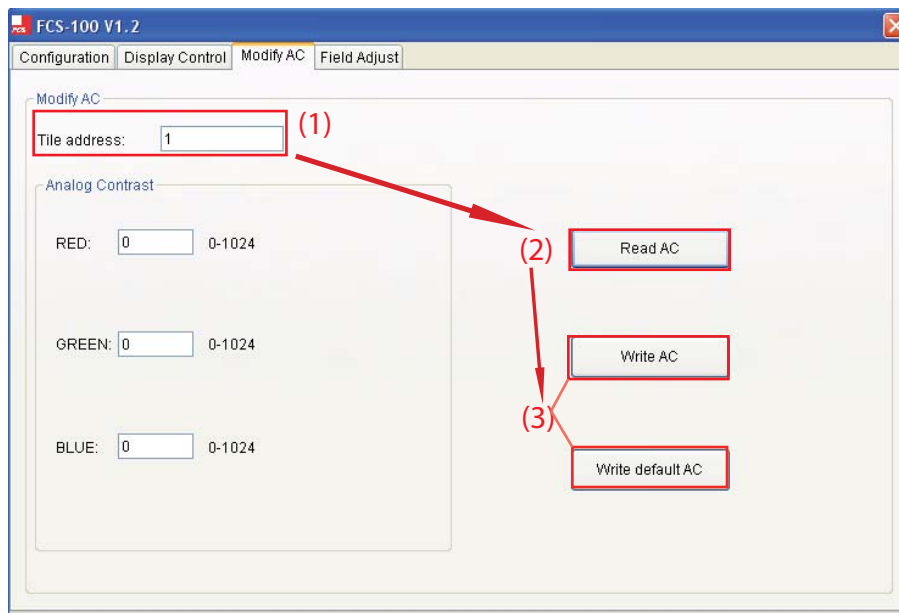


Image 2-14



For other LED types (like SLite 10XP/FX, TF-20, DB-X20, TF-16), Do NOT have "Modify AC" function!

2.6 Field adjust



Why do Field adjust

To correct the uniformity of LED wall, a new LMT brightness value of the selected frame needs to be set to calibrate it.



WARNING: Due to the possibility of making some error in modifying LMT data, So, Must back up the raw LMT data on controller PC before modifying it

Backup/Restore LMT Data

1. To backup or restore LMT Data, press "Backup/Restore LMT Data" In the pop up dialog
2. Fill the start tile number in the "from tile" text, the end tile number in the "To tile" text. The start and end frame number is filled in the "frame" text respectively.
3. Press "Backup LMT data", and select the save folder, LMT data of the selected tile/frame will be saved.
Or,
Press "Restore LMT data", and select the restore folder
4. To get the current process, see the progress bar.
5. To view the running log, see the list box at the bottom of the dialog

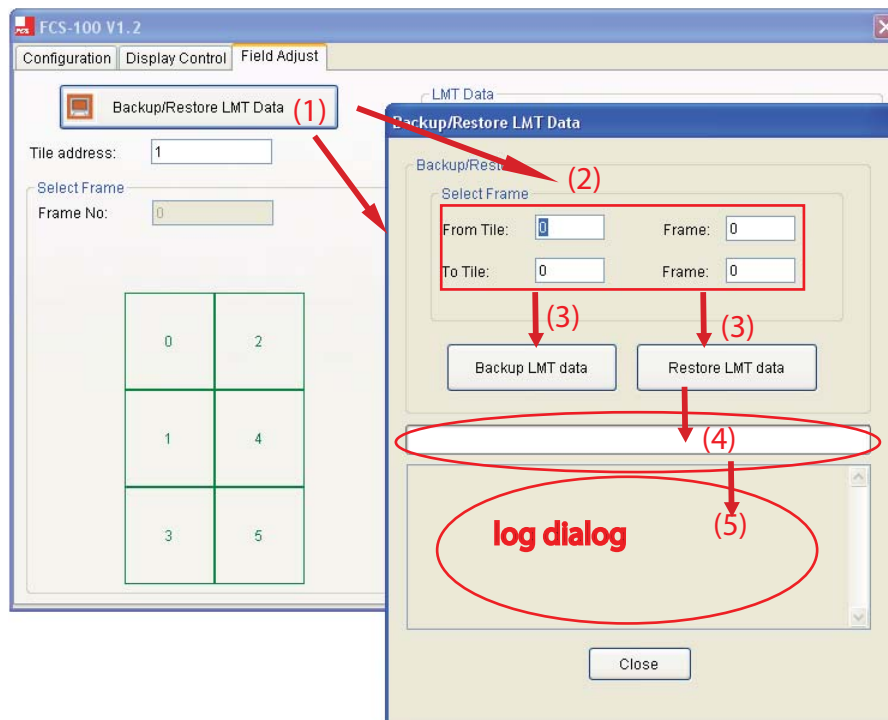


Image 2-15
Backup/Restore LMT Data

Select Frame

1. Input the tile address in "Tile address" text.
2. In "Select Frame", frame numbers of the tile are shown in table. Click on the number in the table and there will be a red colored outline around it

2. Field calibration

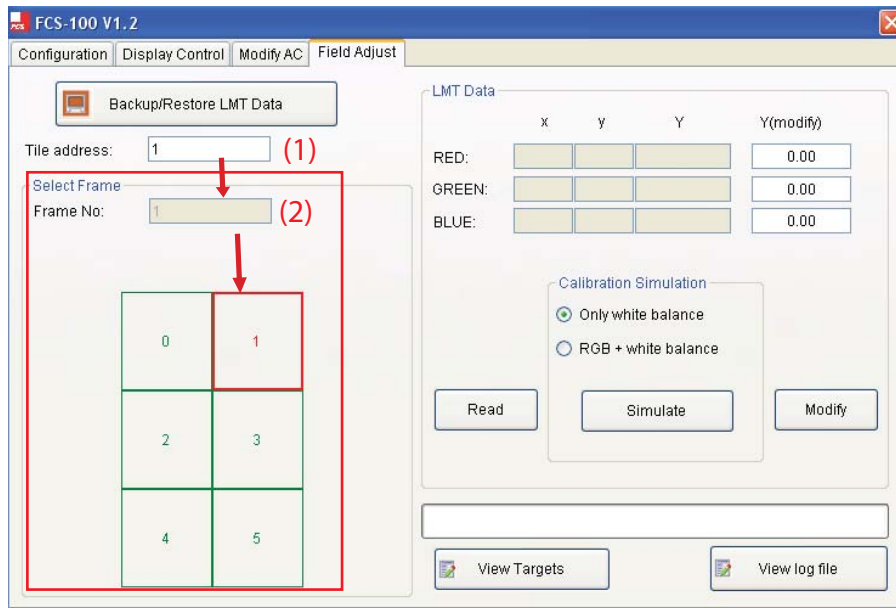


Image 2-16
Show frame position information

3. And on the LED wall, this selected frame is also outline colored

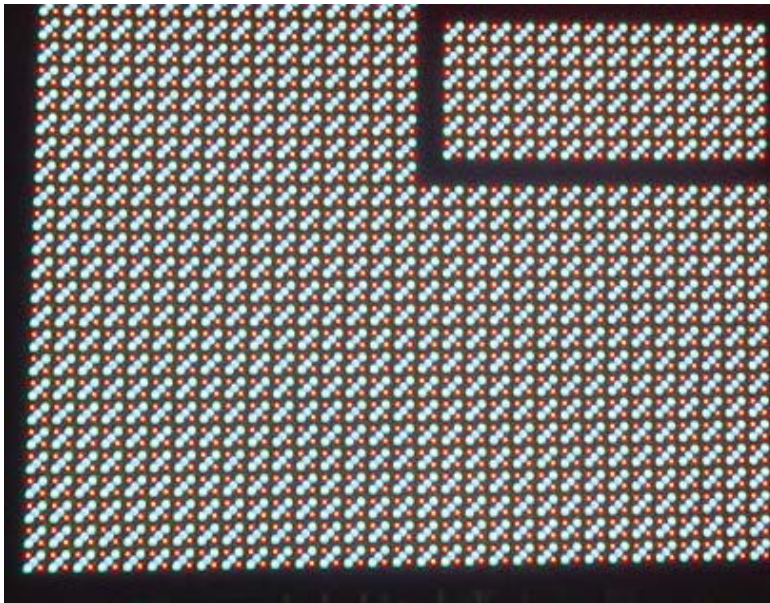


Image 2-17
Show frame position on LED screen



Use "Select Frame" to make sure the desired frame is selected before modifying it.

LMT Data

"LMT Data" shows the LMT brightness Y and color coordinates x, y of the selected frame.

- **Read**
Press "Read", the LMT data x, y, Y of Red, Green and Blue will be shown in the table
- **Modify**
Input new brightness value Y in the text "Y (Modify)" and press "Modify", the new LMT data will be set to the frame.
- **Calibration Simulate**
The "simulate" is to do calibration for the selected tile on LED wall with the new LMT brightness data. Input new LMT brightness value in "Y (modify)", select the wanted calibration way in the radio box (Only white balance or RGB + white balance). Press "Simulate" and view the calibration result on the LED wall

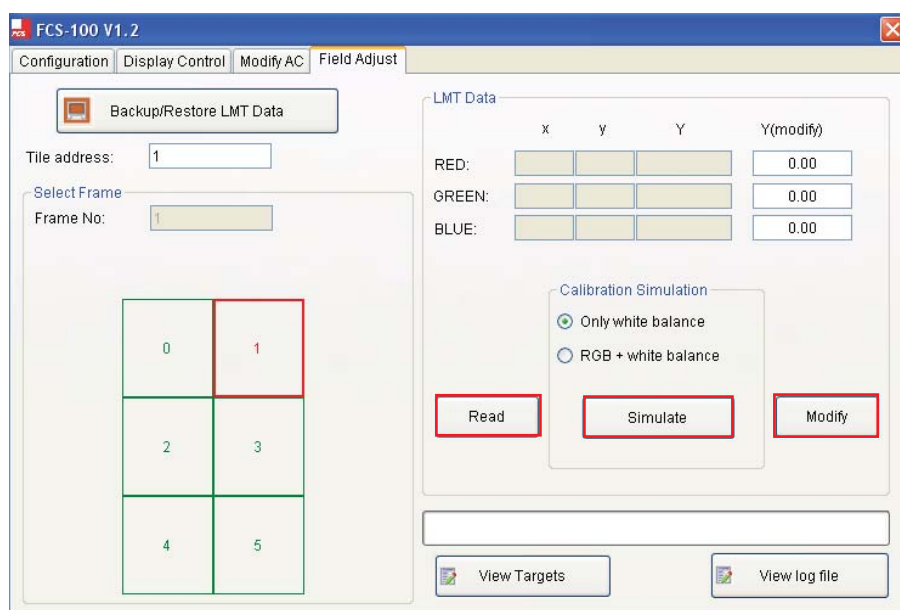


Image 2-18
Modify and simulate



Do “Simulate” with the new LMT data before “Modify” it, is recommended

Targets

Press “View Targets”, to view the calibration target in the pop up dialog as illustrated.

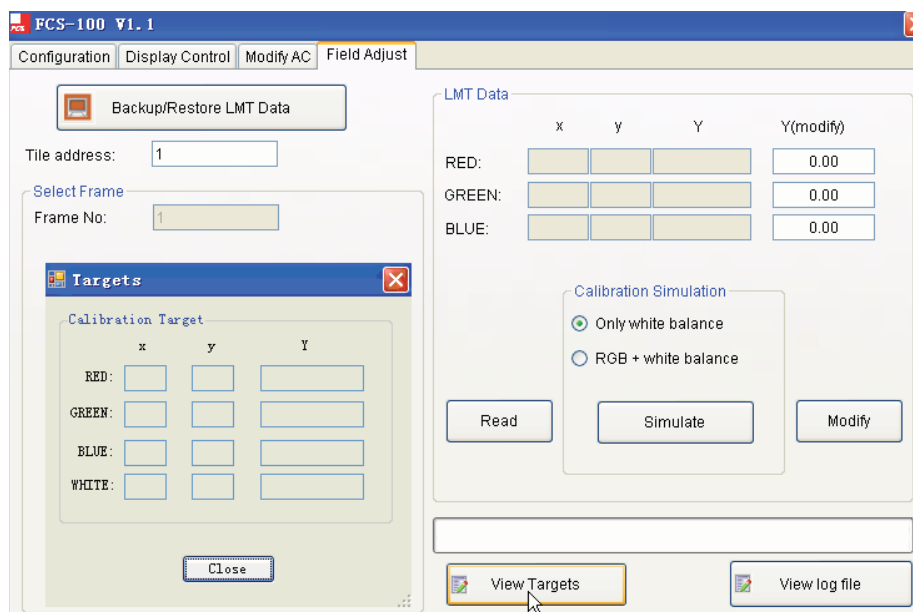


Image 2-19
View Targets

View log file

View log file records the log of current day.

Press “View log file”, view log in the pop up dialog as illustrated.

2. Field calibration

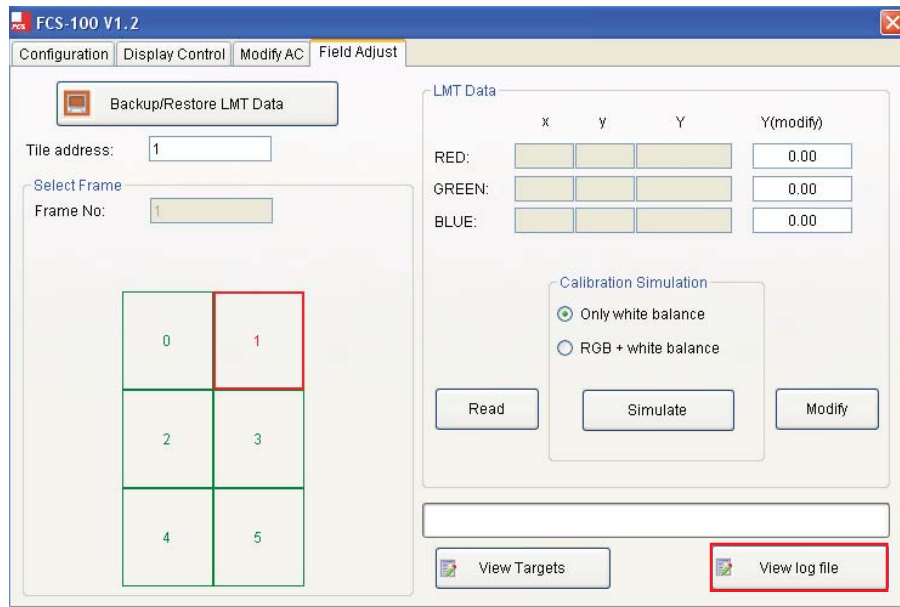


Image 2-20



Image 2-21
View "log"

A. WIRELESS

Overview

Wireless is an optional module to connect CSE's PC with controller PC via wireless network to get convenience for on-site operation. Following is three suppliers of wireless device. And the first one Axelwave is recommended

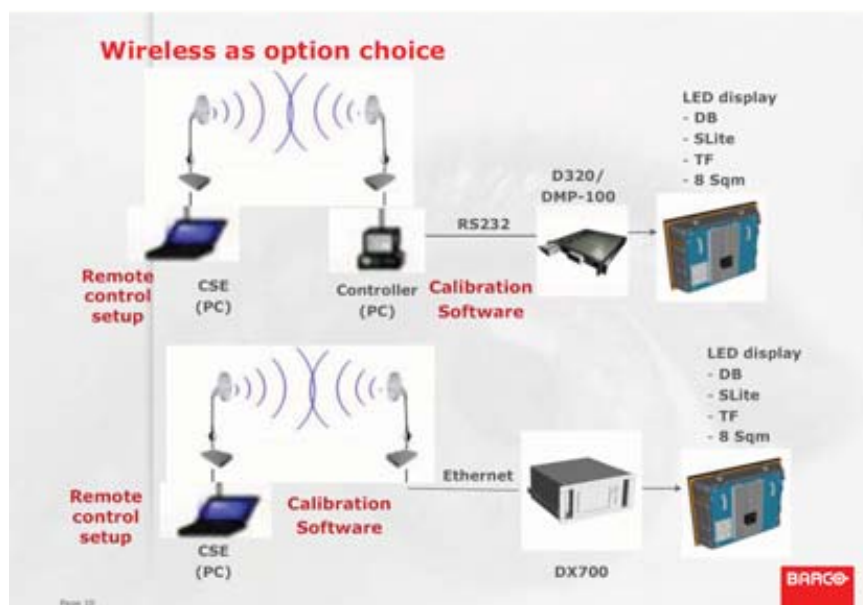


Image A-1
Wireless solution







Items / Suppliers	Axelwave	cisco	NetGear
AP Product Picture			
AP Size	25.6cm X 19.6cm X 6.4cm	20.3 cm x 20.57 cm x 7.87 cm	26.5cm X 26.5cm X 5.5cm
Max Output Power	24dBm	20dBm	16dBm
Signal Transmission distance (open country)	1KM	500M	1KM
Antenna Picture			
Antenna Size	small	32cm*32cm*25cm	20.6cm X 17.6cm X 4cm
Antenna Gain (dBi)	16dBi	18dBi	14dBi

Image A-2
Take Axelwave as an example

Preparations

1. Axelwave Wireless USB Network card
2. Axelwave Access Point Module
3. POE (Power over Ethernet) Power Supply Module
4. Network cables

Physical connection

The wireless communication system should be set up by the following diagram

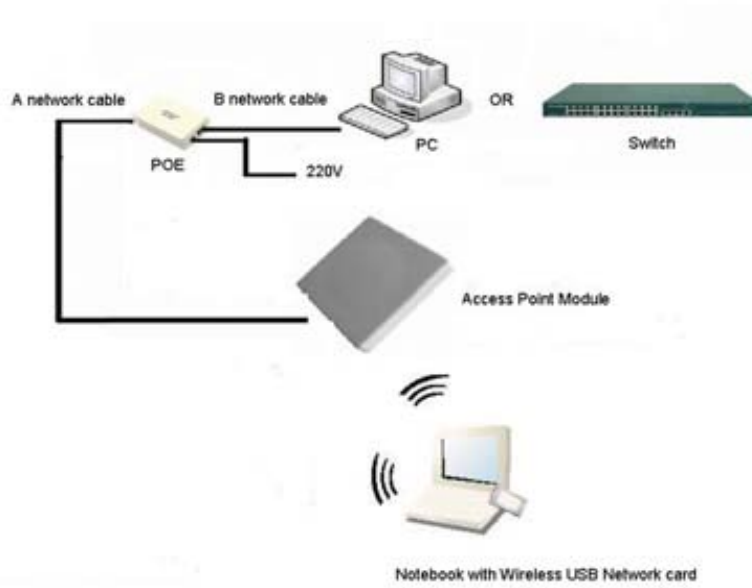


Image A-3
Connection

A.1 Software Installation

Software Installation

After the physical connection, Access Point software need to be installed, and the wireless network card driver is optional, which depends on CSE's PC.

Overview

AP (Access Point) should be fastened to or placed the visible location in order to the transmission of wireless signal. The front panel of Access Point should face the direction of the receiver (eg:a notebook etc).

IF need to configure and manage the Access Point, you should install the software of Wireless LAN Management System on the PC or Notebook that connected with AP, The following driver installation guide uses Windows XP as the presumed operation system. The procedures and screens in Windows 98se, 2000 are familiar with Windows XP.

Access Point Software Installation

1. Insert the CD-Rom that came with this product to your CD-Rom drive. The setup wizard pops up automatically.



Image A-4

Note: If the CD-Rom fails to auto-run, please click on "My Computer" your CD-Rom Drive then double-click the "Setup" icon to start the this wizard.

2. Click on "Next":

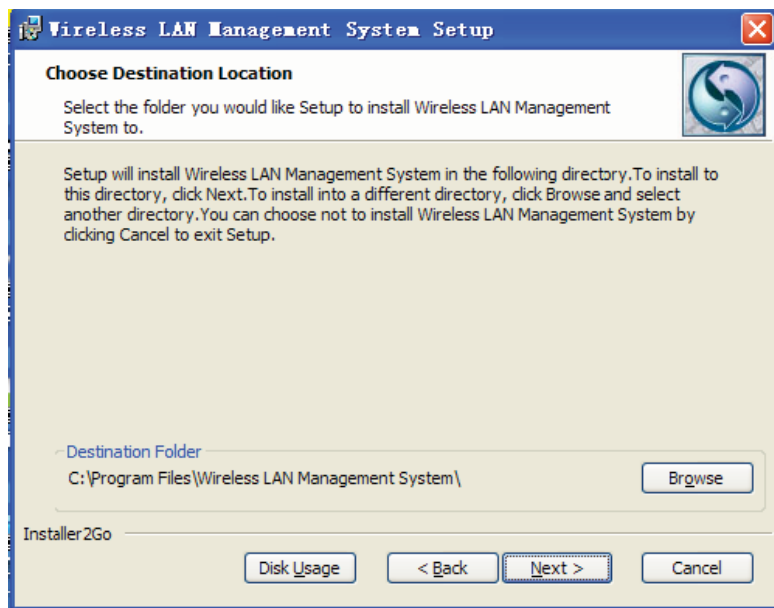


Image A-5

3. Select the folder you install and click "Next"

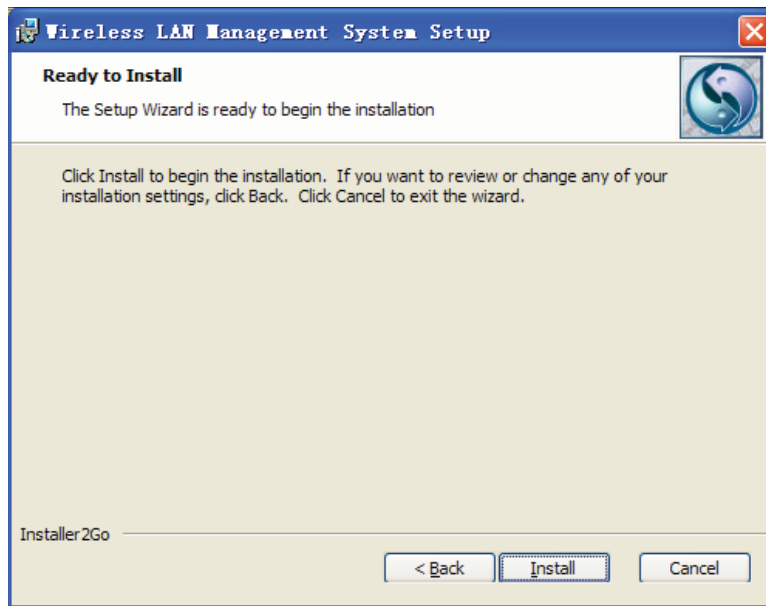


Image A-6

4. Click on the "Install" button to the process of installation
The performance of program needs the WinPcap software package. Install this software

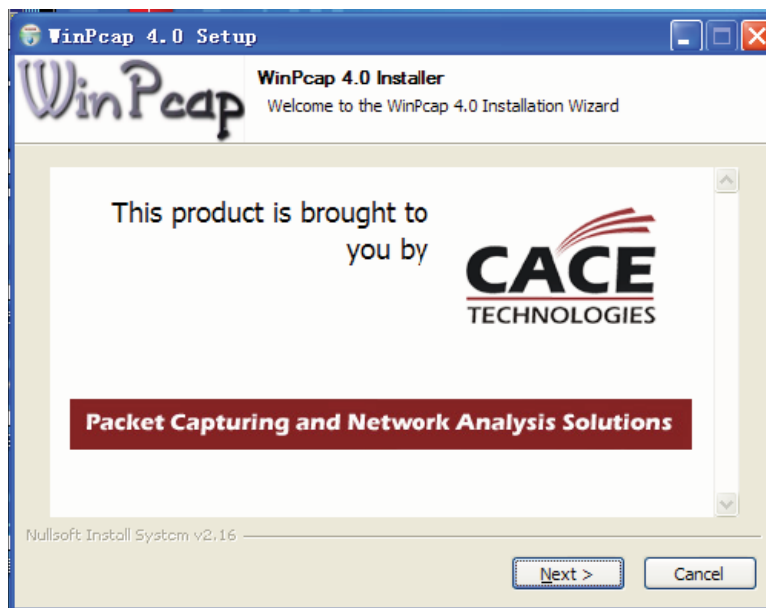


Image A-7

5. Continuously Click on "Next" to achieve the installation



Image A-8

6. Finish the whole installation of software



Image A-9

7. After finishing the installation of Wireless LAN Management System, it will be added into Start Menu of windows desktop.

8. Open Start Menu and select Wireless LAN Management System; input the password to log on.

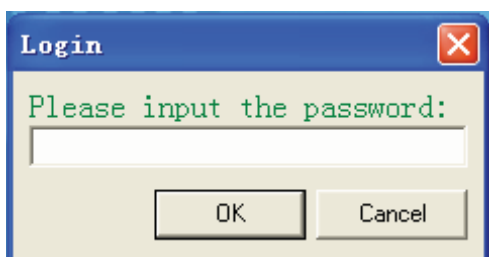


Image A-10

9. Initial account password: admin

10. After logging on, show the main interface of management

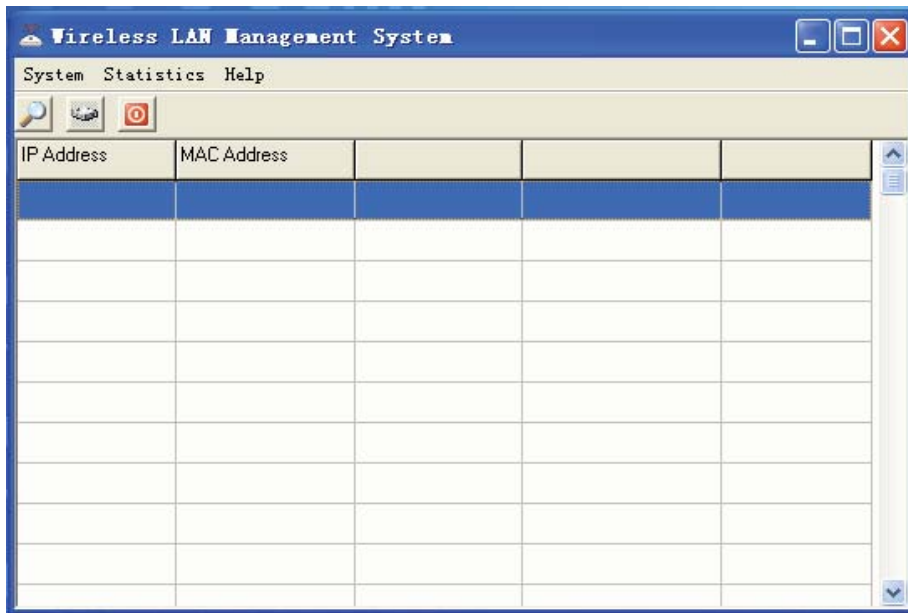


Image A-11

11. Open the menu of "System", click "search" to perform automatic IP search

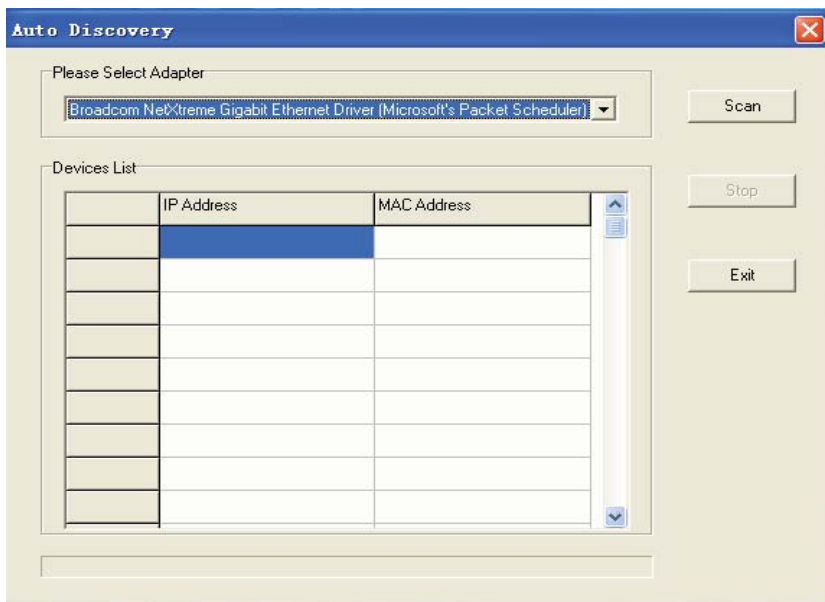


Image A-12

12. Select the network adapter, click "Scan" to start the search

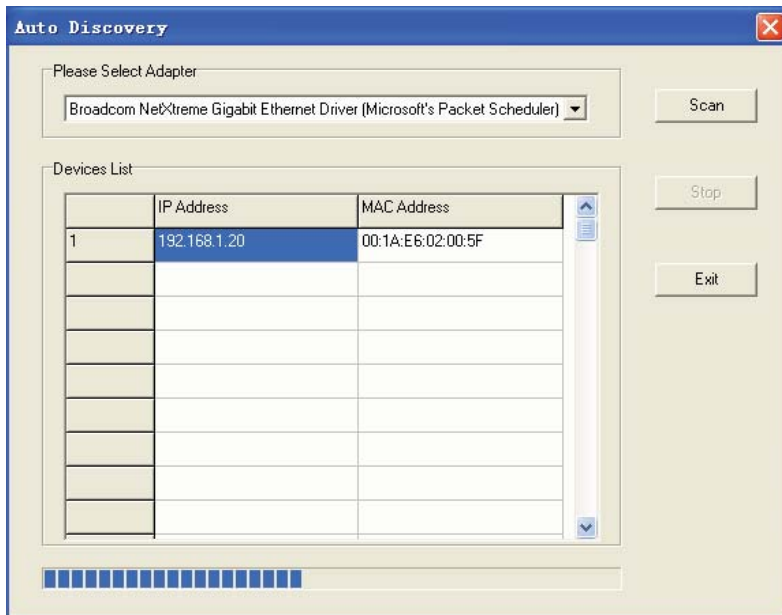


Image A-13

13. Finish the search, you can find the list of devices detected

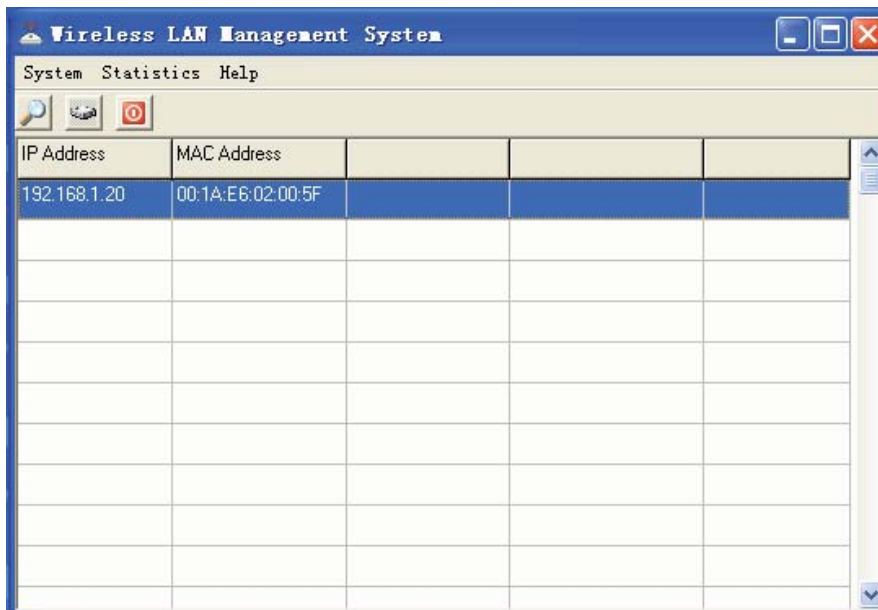


Image A-14

14. Pitch on the device that needs to be configured, open the system menu and click "Setup", then you can configure the device (etc)

Tip: By this way, you can configure the IP Adress, Subnet Mask, Gateway of Access point

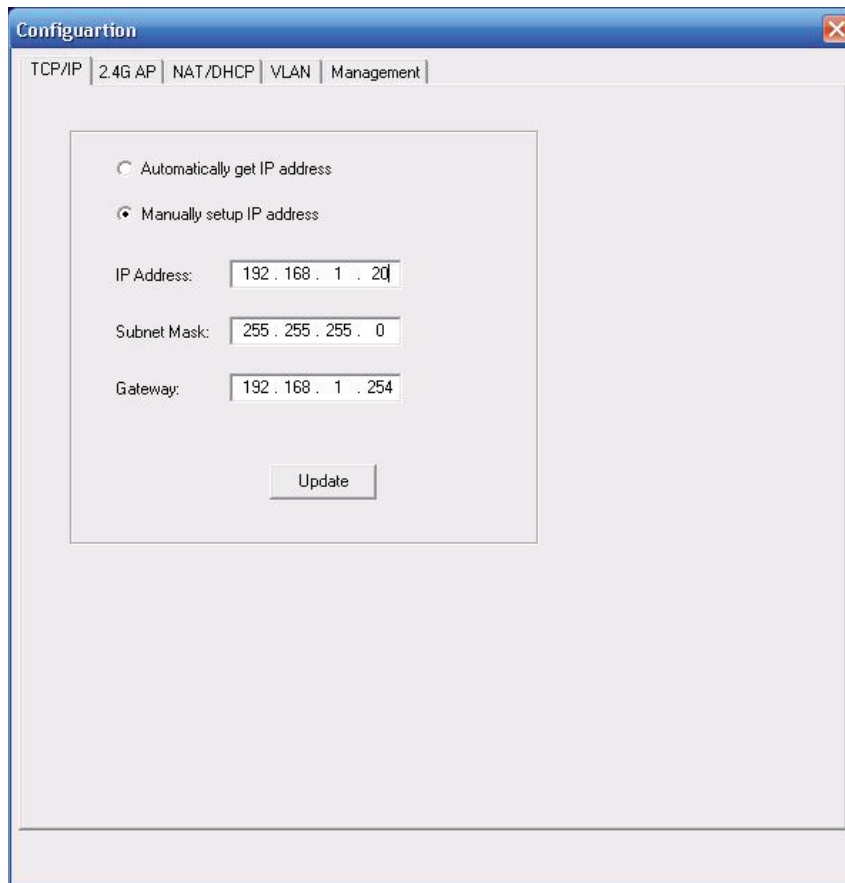


Image A-15

Wireless Network Card Installation

Preparations

First assemble the wireless network card with the following items

- High-Power Wireless USB Adapter
- One USB Cable
- One 2dBi antenna

Then you can insert the USB port of Notebook to use it.

Driver installation

Before using wireless network card, you should firstly install the driver, configure wireless network card and make it in the same network segment with AP.

The following driver installation guide uses Windows XP as the presumed operation system. The procedures and screens in Windows 98se, 2000 are familiar with Windows XP.

Insert the CD-Rom that came with this product to your CD-Rom drive. The menu window pops up automatically. Please click the "Driver" button of this product.



If the CD-Rom fails to auto-run, please click on "My Computer" your CD-Rom Drive then double-clicks the "Setup" icon to start the menu

How to install Driver

1. The language-selecting window pops up. Please select the language you use and click OK.

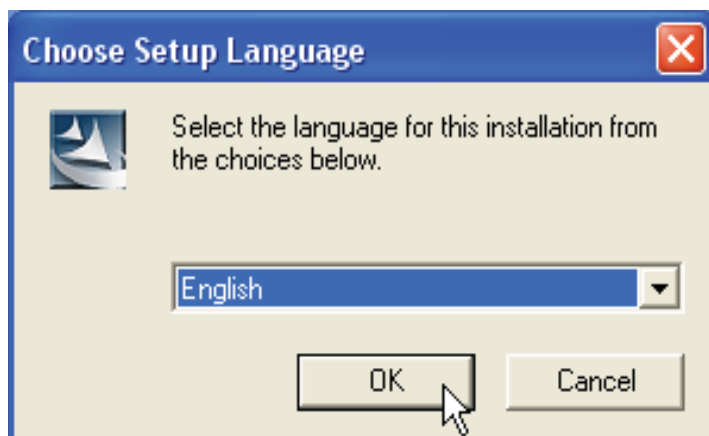


Image A-16

2. The welcome window pops up. Click on the "Next" button to proceed

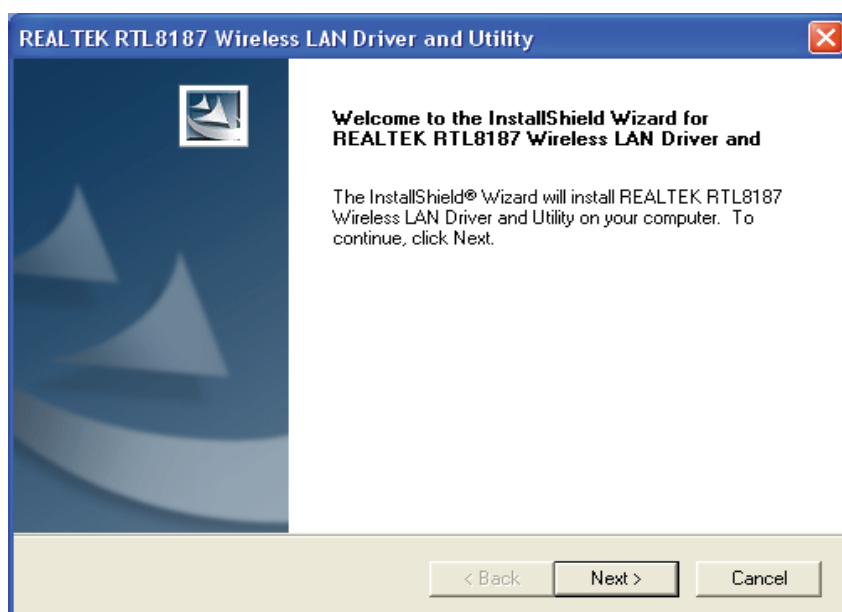


Image A-17

3. Please wait while installation

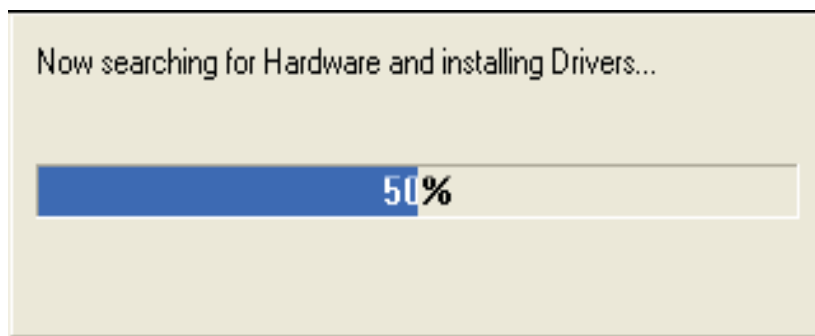


Image A-18

4. This Windows Logo testing warning window may pop up upon installation. Please click on the "Continue Anyway" to continue



Image A-19

5. If you are using Windows 98se or ME, the system may ask for the driver CD. Please click the Browse button. Select your CD-ROM Drive then select USB Driver Win98 (or WINME) to browse the driver. If not, please skip this step.
6. Click on the "Finish" button to complete driver and utility installation.

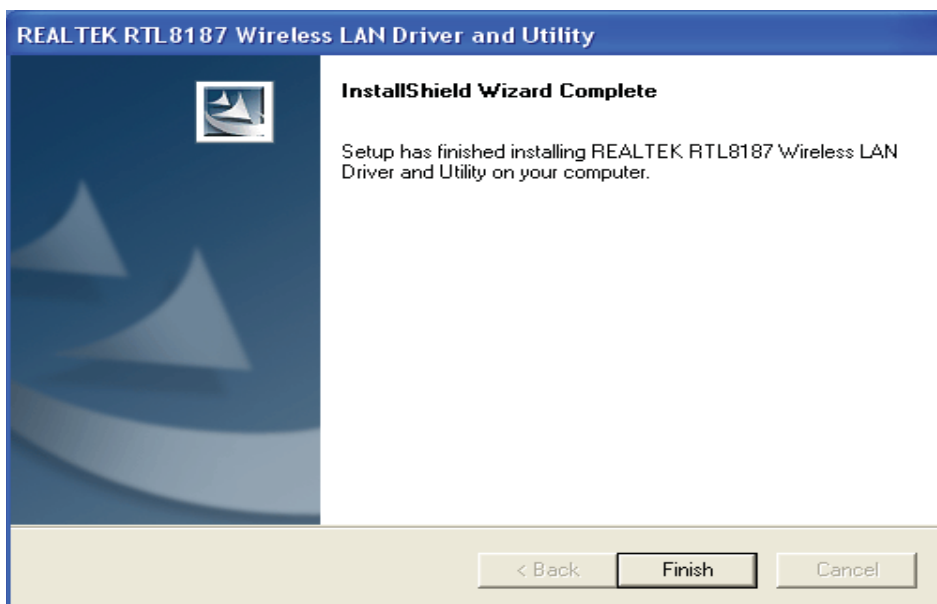


Image A-20

7. For Windows XP and 2000 users, please insert this USB wireless adapter to your computer. If you are using Windows 98se or ME, please restart the system first before connect this wireless adapter to your computer.
8. The "Found New Hardware Wizard" pops up.
Note: *This wizard won't pop up in Windows 98 and ME. The system finds the new hardware and installs the hardware automatically. Please skip the following steps*
9. Select "No, not this time" and click on the "Next" button.



Image A-21

10. Select "Install the software automatically" and then click the "Next" button.

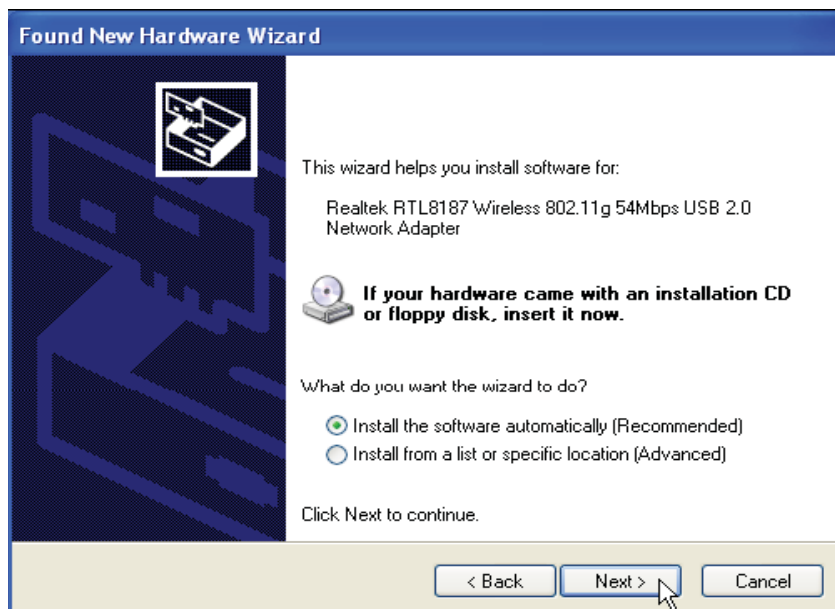


Image A-22

11. Please wait while installing the driver. The Windows logo testing warning window may pop up again. Please click on the "Continue Anyway" button to continue.



Image A-23

12. Click on the "Finish" button to complete installation.

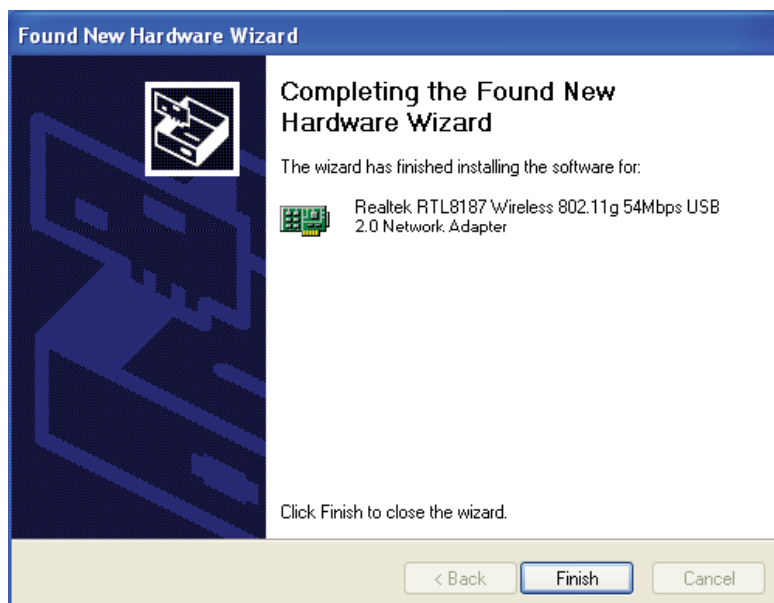


Image A-24



After installing the driver, click the icon of "wireless network connection" to configure the IP, then search the wireless network of AP in the list of wireless network connection and double click on the connection to connect AP with wireless network card, to make the notebook installed wireless network card into the wireless network of Access Point, set up a wireless LAN environment